AIR TECHNIQUES INCORPORATED

TECHNICAL MANUAL

COMPRESSO-DRI, MODEL M5A

SERIAL NUMBER 2100 AND ABOVE

Air Techniques Incorporated

70 CANTIAGUE ROCK ROAD

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SECTION I
INTRODUCTION

1-1. GENERAL

This manual contains complete operating and maintenance instructions for Compressor-Dehydrator, Dental Equipment, NSN 6520-00-139-1246, (Compresso-Dri, Model M5-A) manufactured by Air Techniques, Inc. , 70 Cantiague Rock Road, Hicksville, New York 11801.

1-2. DESCRIPTION AND PURPOSE

The compressor is a complete portable unit with an integral drying section which automatically regenerates the drying agent. The unit supplies compressed air, free of oil, moisture, and particulate matter, to operate a Dental Operating and Treatment Unit. An integral part of the compressor is a transit case, the cover of which is designed to serve as a sound supressor and protective device during normal operation. The compressor can be rapidly placed into operation and is readily maintained.

1-3. LEADING PARTICULARS

The leading particulars of the compressor are contained in table 1-1.

1-4. EQUIPMENT SUPPLIED

Table 1-2 lists the separate items supplied with the compressor. Refer to Section VII, Parts List, for a complete list of components.

1-5. TOOLS AND TEST EQUIPMENT

The tools and test equipment required to maintain the compressor are listed in table 1-3.

1-6. STORAGE DATA

There are no special storage requirements for the compressor.

Table 1-1. Leading Particulars

Item	Characteristic
Power Requirements	115 vac 10%, 60 HZ, 14.7 amp
Ambient temperature	40° to 120° F (4.4°-48.9° C)
Normal load	3.8 scfm at 60 psi
Capacity	5.4 scfm at 60 psi
Transit Case Dimensions	24-3/4 in. x 23 in. x 16-1/4 in.
Weight	160 lb.
Site requirements	No more than 20 ft. from point of use, with protection from elements

Table 1-2. Equipment Supplied

Item	Description
Interconnecting air hoses	Two 10-foot sections, with appropriate connectors, to connect compressor to Dental Operating and Treatment Unit
Technical Manual	Complete operating and maintenance instructions.

Table 1-3. Tools and Test Equipment

Item	Use
Multimeter	For checking voltages and continuity.
8 in. and 10 in. adjustable open-end wrench.	For removing valves and fittings
5 mm and 6 mm Allen wrenches	For removing compressor head bolts.
1/2 in socket and drive	For removing compressor from transit case.
Screwdriver	For removing screws
Phillips screwdriver, No. 1 point	For removing screws
1/2 in. box and open end wrench	For removing mounting nuts
5/16" nut driver	For adjusting unloader valve
7 mm nut driver	For removing motor terminal hardware.
2 Jacking bolts, 5/16 - 18 X 4-1/2 long, fully threaded	For removing compressor piston assembly.
Torque wrench (0-250 in lbs.)	For bolt tightening.
Depth Gauge	For checking head clearance.

SECTION II

PREPARATION FOR USE AND INSTALLATION

2-1. GENERAL

Check the transit case and contents for any signs of damage before using the unit. If any damage is apparent, refer to Section V, Maintenance Procedures, for the applicable procedure.

2-2. INSTALLATION

The compressor may be installed in any location that is not greater than 20 feet from the point of use (the combined length of the two interconnecting hoses supplied) and provides protection from the elements.

CAUTION

Do not allow water to accumulate in the transit case.

2-3. PREPARATION FOR USE

To prepare the compressor for use, proceed as follows:

a. Remove transit case from shipping carton.

b. Unscrew pressure relief valve on transit case cover and remove transit case cover.

c. Check pressure gauge to be sure storage tank is not pressurized. If pressurized, release pressure by opening drain valve. Refer to figure 4-1 for the location of operating controls.)

d. Be sure tank drain valve is closed and set circuit breaker to OFF.

e. Attach appropriate length of interconnecting hose from compressor to Dental Operating and Treatment Unit.

f. Connect power cable to 115 volt, 60 HZ power source.

2-4. OPERATIONAL CHECKOUT

CAUTION

Do not restrict air flow through air intake silencer.

To check out the compressor for proper operation, proceed as follows:

NOTE

Do not draw any air from the compressor during the operational checkout procedure.

a. While depressing red manual unloader tab on pressure switch, set ON-OFF circuit breaker to ON. Compressor motor and dryer cooling fan will energize.

b. Observe pressure gauge. Pressure should increase to 80 psi in approximately 40 seconds and compressor should stop but cooling fan will continue to run.

c. Pressure should decrease to 60 psi in approximately 31 seconds. During this time a hissing sound should be heard as purged air is discharged through exhaust muffler indicating that regeneration system is operating properly.

d. When pressure decreases to 60 psi compressor should start and run for approximately 8 seconds until pressure again reaches 80 psi.

e. At 80 psi compressor stops and cycle should repeat (steps c and d).

f. Check color of dryness indicator. If "blue", compressor is ready for operation. If not "blue", drying system should be regenerated before using compressor (paragraph 5-15).

g. Rotate four transit case cover supports so that they overlap edges of transit case at right angles. Place transit case cover on supports. (Refer to figure 2-1.)

Figure 2-1. Compressor Setup for Operation

SECTION III

THEORY OF OPERATION

3-1. GENERAL

The operation of the compressor consists of two cycles, the pumping cycle and the purging cycle. During the pumping cycle, intake air is compressed, cooled, directed through a drying chamber where a desiccant removes any water vapor, and passed into a storage tank. When the pressure in the storage tank reaches 80 psi, the compressor stops and the purging cycle begins. During the purging cycle, a portion of the dry compressed air in the storage tank is bled back through drying tank to the atmosphere. This expanded dry air re-absorbs any moisture from the desiccant and carries it out into the atmosphere. When the pressure in the storage tank decreases to 60 psi, the compressor again starts and the pumping cycle begins. These two cycles continue to automatically take place during operation of the compressor. Throughout both cycles, the cooling coil fan runs continuously and the dry compressed air in the storage tank is supplied to the Dental Operating and Treatment Unit. The following paragraphs explain these cycles in detail.

3-2. PUMPING CYCLE (Figure 3-1)

Initially, with no pressure in the storage tank, the unloader valve and the pressure switch contacts in series with the compressor motor are closed by the action of the pressure switch. When the circuit breaker is set to ON, both the compressor and the cooling coil fan motor starts. Compressed air from the compressor is directed through the cooling coil, the drying chamber, and the flow control valve into the storage tank. As mentioned above, the drying chamber contains a desiccant to remove moisture from the air. The flow control valve contains a ball check valve to allow compressed air to enter the storage tank while preventing it from leaving during the pumping cycle. The pressure gauge on the storage tank indicates the internal air pressure within the tank. The dryness indicator indicates the presence or absence of moisture in the stored compressed air by its color (blue for dry, pink for wet). When the storage tank pressure reaches 80 psi, the pressure switch opens the electrical switch in series with the compressor motor, stopping the compressor, and opens the unloader valve, venting the compressor and drying chamber to the atmosphere. This ends the pumping cycle, and the purging cycle automatically begins.

3-3. PURGING CYCLE (Figure 3-2)

With the unloader valve open and the drying chamber vented to the atmosphere, dry compressed air in the storage tank passes through a bleed hole in the flow control valve where it expands at the controlled rate. This large volume of dry expanded air passes through the drying chamber, where it re-absorbs moisture from the desiccant, and releases it into the atmosphere. When the pressure in the storage tank decreases to 60 psi, the pressure switch closes and the pumping cycle again begins. These two cycles repeat as long as the compressor is in operation.

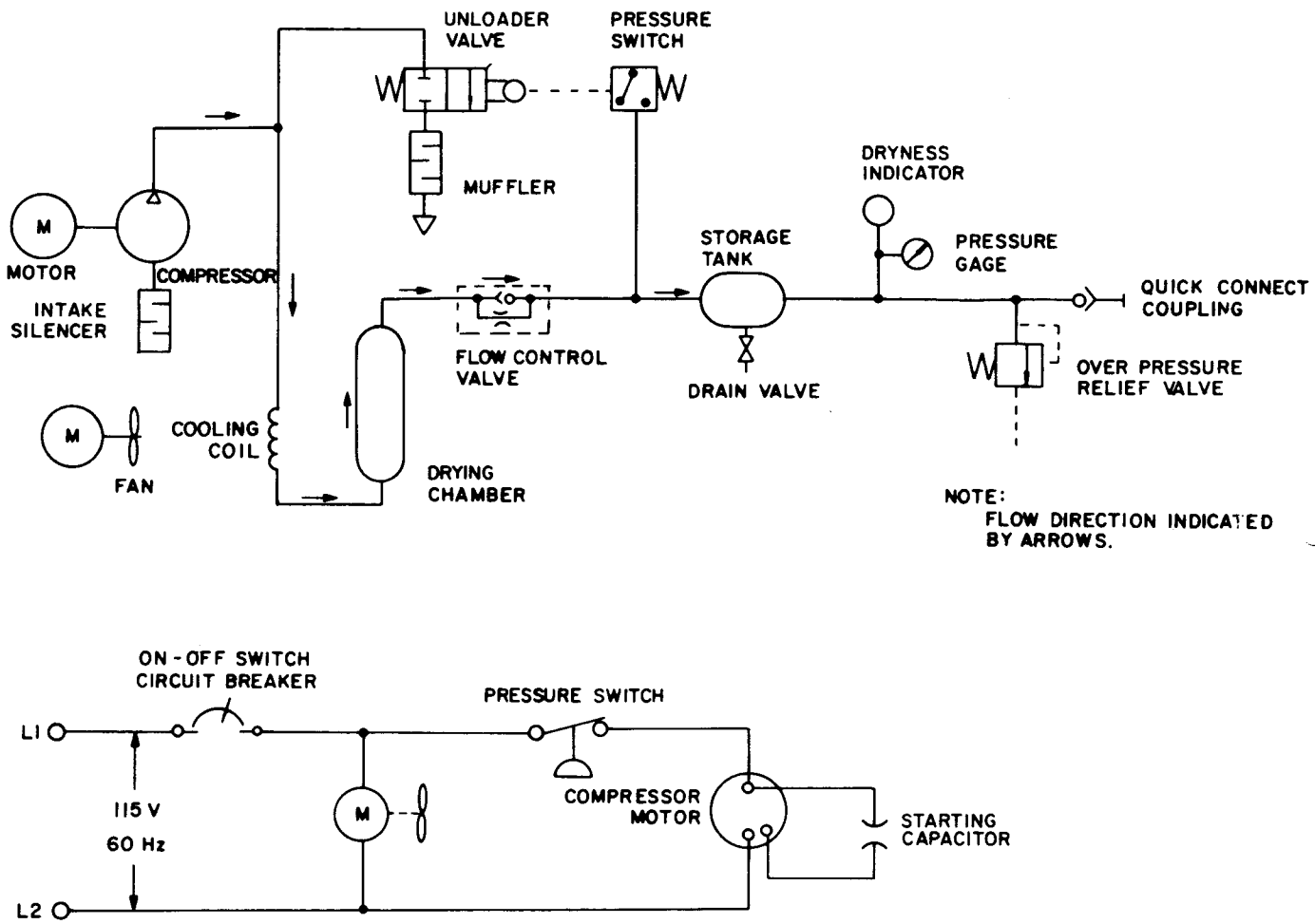

Figure 3-1. Pumping Cycle, Schematic Diagram

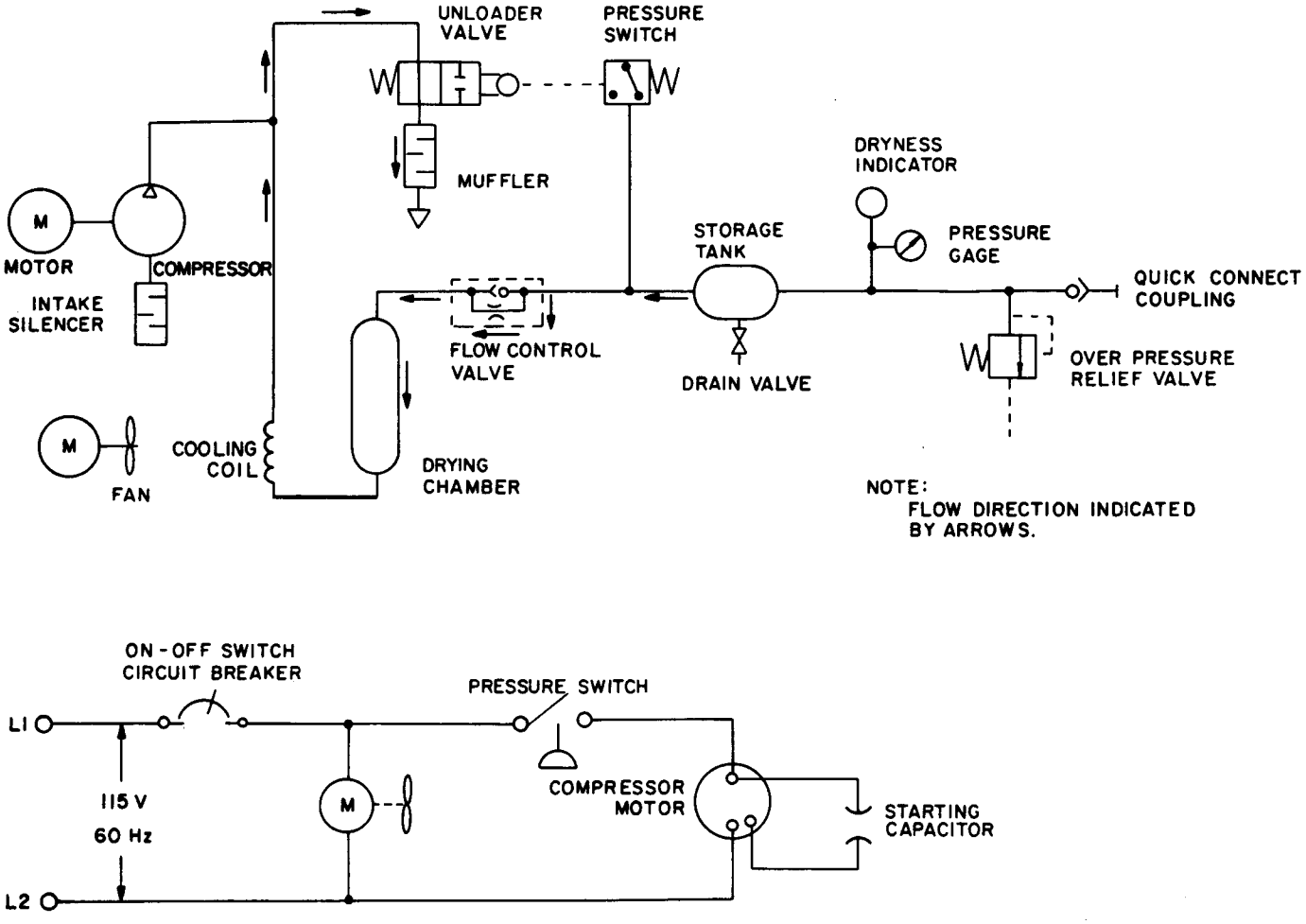

Figure 3-2. Purging Cycle, Schematic Diagram

SECTION IV

OPERATING INSTRUCTIONS

4-1. OPERATOR'S CONTROLS AND INDICATORS

The controls and indicators are listed in table 4-1 and illustrated in figure 4-1.

Table 4-1. Operator's Controls and Indicators

Figure 4-1 Index	Name	Use
1	Drain Valve	Removing water and/or air from storage tank.
2	Dryness Indicator	Indicates presence of moisture in air. (Blue is dry - pink is wet.)
3	Pressure Gauge	Indicates pressure of air in storage tank.
4	Red manual unloader tab	Unload compressor head before starting
5	ON-OFF circuit breaker.	Power switch and protective device for compressor motor.
6	Swivel arm	Support transit case cover above compressor during normal operation

4-2. OPERATING PROCEDURES

Prior to operating the compressor perform the operational checkout procedures given in paragraph 2-4. The actual operating procedures of the compressor are fully automatic. As compressed air is required by the load, the compressor will operate to supply the required air. There are no operating adjustments associated with normal operation.

4-3. INTERMITTENT OPERATION

If compressed air is not to be drawn from the compressor for any period of time, set the ON-OFF circuit breaker to OFF.

4-4. RESTARTING

To restart the compressor, set the circuit breaker to ON.

CAUTION

Always remove compressor head pressure by depressing the red unloader valve tab on the pressure switch while setting the circuit breaker to on. Failure to depress the red tab will result in tripping of the circuit breaker.

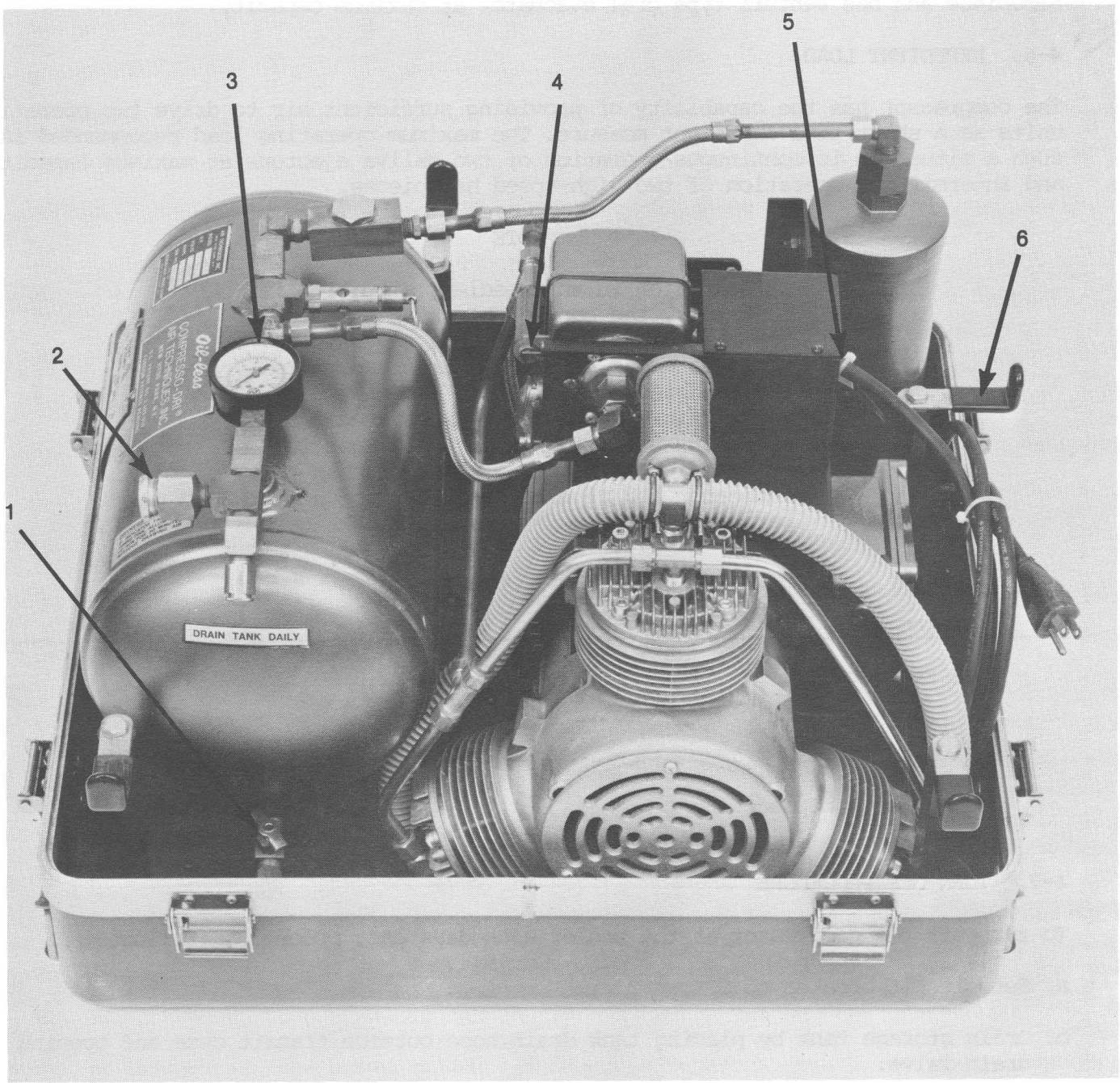

Figure 4-1. Operators Controls and Indicators

4-5. NORMAL LOAD

The recommended maximum operating load under normal circumstances is 3.8cfm. (Refer to table 4-2 for the load factors of various dental instruments.) The normal recommended load is equivalent to the continuous operation of one high-speed handpiece and one venturi type oral evacuator at maximum capacity.

4-6. EXPEDIENT LOAD

The compressor has the capability of providing sufficient air to drive two operating units as a short-time expedient measure. The maximum operating load recommended in such a situation is continuous operation of two saliva ejectors at maximum capacity and intermittent operation of two high-speed handpieces.

NOTE

If operation in an expedient situation is necessary, the control block in the Dental Operating and Treatment Unit may have to be adjusted to permit higher pressure to the handpieces in order to insure their peak efficiency when the two systems are operating simultaneously. After use in an expedient situation, check dryness indicator and if not blue refer to paragraph 5-15.

Table 4-2. Load Factors

System	Scfm
Oral Evacuator	2.5
Saliva Ejector	1.0
High-speed handpiece	1.3

4-7. TURN-OFF PROCEDURE

To turn off the compressor at the end of each days use, proceed as follows:

a. Set circuit breaker to OFF.

b. Drain storage tank by placing tank drain hose outside transit case and opening drain valve.

NOTE

If any water is drained from the storage tank the compressor is being overloaded.

c. When pressure gauge indicates 0 psi, close drain valve and place drain hose inside transit case.

SECTION V

MAINTENANCE INSTRUCTIONS

5-1. GENERAL

This section contains maintenance instructions for the compressor. If replacement parts are required for any of the maintenance procedures detailed in the following paragraphs, refer to Section VII, Parts List.

5-2. CLEANING

Any accumulation of dust and dirt should be periodically removed from the compressor. Particular attention should be given to the intake silencer and fan guard. If extreme operating conditions produce a heavy accumulation of dust and dirt on the intake silencer it should be replaced. As an expedient measure, the intake silencer can be cleaned by unscrewing it from the compressor head and blowing air back through it.

WARNING

DO NOT USE ANY TYPE OF LIQUID CLEANER OR SOLVENT TO CLEAN THE INTAKE SILENCER ELEMENT.

5-3. INSPECTION

Visually inspect the compressor for any obviously damaged hoses, tubes, cables or other items. Repair or replace as required.

5-4. PERFORMANCE VERIFICATION

The operational checkout procedure given in paragraph 2-4 should be performed daily to verify proper functioning of the compressor.

5-5. TROUBLESHOOTING

Table 5-1 gives the probable causes for any abnormal indications that may be obtained during operation of the compressor, as well as the corrective action to be taken.

5-6. REMOVAL

The following paragraphs contain removal procedures for those units of the compressor that are not obvious from visual inspection.

TABLE 5-1. COMPRESSOR TROUBLE-SHOOTING(Con't.d)

SYMPTOM	PROBABLE CAUSES	CORRECTIVE MEASURE
Compressor motor runs but unusual noises are present(cont'd)	Broken reed valves	If valves are broken the compressor will vibrate. Check and replace as necessary (paragraph 5-16).
	Defective bearings	Bearings are not field replaceable. Replace motor/compressor.
Compressor runs but will not build up pressure to 80 psi	Defective pressure gauge	Replace pressure gauge.
	Defective pressure switch	Replace pressure switch
	Intake silencer restricted	Replace intake silencer (may be cleaned as an expedient, paragraph 5-2).
	Worn rings or guides	Replace rings (paragraph 5-16).
	Drain valve open	Close drain valve.
	Leak in system	Locate and repair leak.
	Unloader valve	Repair or replace (paragraph 5-14)
	Broken reed valves	Refer to paragraph 5-16.
Dryness indicator is not blue	Purging system not functioning	Perform operational checkout procedure (paragraph 2-4). If purging not taking place check unloader valve, pressure switch, and exhaust muffler.
	Compressor running too frequently	Compressor undersized for installation or leaks. If leak locate and repair.
	Drying chamber saturated	Regenerate drying chamber (paragraph 5-15).

5-7. REMOVAL OF COMPRESSOR ASSEMBLY FROM TRANSIT CASE. To remove the compressor assembly from the transit case, refer to figure 7-1 and proceed as follows:

a. Remove four nuts, lockwashers, and flat washer from bolts securing compressor base plate to transit case bottom.

b. Lift compressor assembly (mounted on base plate) from transit case bottom.

c. If damaged, remove sound foam from transit case.

NOTE

The four bolts extending through the lower transit case have rubber washers under the heads. Be sure they are in place when reassembling to assure water proof integrity.

5-8. REMOVAL OF DRYER AND COOLING COIL ASSEMBLY. To remove the dryer and cooling coil assembly, refer to figure 7-2 and proceed as follows:

a. Disconnect cable from cooling fan to circuit breaker at connector.

b. Disconnect fittings between top of drying chamber and metal flex hose to flow control valve and between cooling coil and metal flex hose to unloader valve.

c. Remove two nuts, lockwashers, and flat washers from bolts securing dryer and cooling assembly to compressor assembly base plate.

d. If additional disassembly of the dryer and cooling assembly is required, refer to figure 7-2 and disassemble as required.

5-9. REMOVAL OF PRESSURE SWITCH AND BRACKET ASSEMBLY. To remove the pressure switch and bracket assembly, refer to figure 7-3 and proceed as follows:

a. Remove cover from motor box by removing two screws.

b. Remove four screws, lockwasher, and flat washers from the inner corners of the motor box. Note the ground wires (green) under one of the screws.

c. Disconnect cable from circuit breaker to cooling fan at connector.

d. Remove black, green and white pressure switch wires from under appropriate screws within motor box. (Refer to wiring diagram, figure 5-1.)

e. Disconnect fittings between pressure switch and flex hose to storage tank inlet assembly and between unloader valve and flex hose to cooling coil.

f. Raise pressure switch and bracket assembly from between motor and motor box.

g. If additional disassembly of the pressure switch and bracket assembly is is required, refer to figure 7-3 and disassemble as required.

5-10. REMOVAL OF MOTOR AND COMPRESSOR ASSEMBLY. To remove the motor and compressor assembly, refer to figure 7-1 and proceed as follows:

a. Remove compressor assembly from transit case (paragraph 5-7).

b. Disconnect fittings between unloader valve and pressure line from cylinder to cylinder, between unloader valve and metal flex hose to cooling coil, and between pressure switch and metal flex hose to to storage tank inlet assembly.

c. Remove intake flex hoses from cylinder to cylinder (hose clamps secure flex hoses at each end).

d. Remove intake silencer from top cylinder.

e. Disconnect cable from motor box to capacitor at connector on capacitor.

f. Disconnect cable from circuit breaker to fan at connector.

g. Remove four nuts, lockwasher, and washers from bolts that secure motor and and compressor assembly to base plate.

h. Lift motor and compressor assembly from base plate. (Note four spacers under motor and compressor assembly.)

i. If required, pressure switch and bracket assembly can be removed as described in paragraph 5-9. To disassemble the motor and compressor assembly, refer to paragraph 5-16.

5-11. REMOVAL OF CAPACITOR. To remove the capacitor, proceed as follows:

a. Remove cable between motor and capacitor at connector on capacitor.

b. Loosen four nuts and lockwashers securing capacitor bracket to base plate.

c. Slide capacitor out from under bracket.

5-12. DISASSEMBLY AND REPAIR

The following paragraphs contain disassembly and repair procedures for those units of the compressor that can be field repaired. Only disassemble to the extent required to accomplish the repair.

5-13. FLOW CONTROL VALVE. The flow control valve can be disassembled, cleaned, and repaired as required. Refer to figure 7-4 and proceed as follows:

a. Remove hex cap (1), spring (3), and orifice seat (4) from valve body (6).

b. Inspect hex cap O-ring (2) and orifice seat O-ring (5) for damage.

c. Inspect all parts for wear, pock marks, dirt or other signs of damage. Clean and/or replace as required.

d. Insert orifice seat (with O-ring in place), spring, and hex cap (with O-ring in place) into valve body and tighten securely.

CAUTION

When installing flow control valve on compressor. be sure end market INLET is connected to flex hose from storage tank assembly.

5-14. PILOT OPERATED PRESSURE SWITCH UNLOADER VALVE

NOTE

This assembly is factory installed on M5A compressors, Serial number 2100 and above. It may be installed on any M5 series compressor by following the steps outlined in paragraph 5-14b.

a. The unloader valve can be disassembled,cleaned, and repaired as required. Refer to figure 7-5 and proceed as follows:

1. Remove unloader valve from pressure switch bracket by removing nut (7) lock washer (6).

2. Remove inlet tee (1) from valve body (4).

3. Remove strainer (2) from inlet tee.

4. Tilt valve body to remove Valve Seat Pin Assembly (3).

5. Remove muffler (5) from valve body, clean if required.

CAUTION

DO NOT PLUG MUFFLER PORT IN ANY MANNER.

6. Inspect all parts for wear. pock marks, dirt or other signs of damage. Clean and/or replace as required.

7. Reassemble unloader valve by inserting Valve Seat Pin Assembly (3), strainer and inlet tee into valve body. Install muffler.

NOTE

When installing the pilot operated pressure switch be sure lockwasher (7) and mounting nut (8) are positioned on each side of pressure switch bracket as shown in figure 7-5.

b. Adjust the Pilot Operated Pressure Switch Unloader Valve as follows:

1. Remove the pressure switch cover.

CAUTION

For your safey, power should be removed from compressor when working inside pressure switch.

2. Loosen the locknut located inside the pressure switch in the upper right hand corner.

3. Turn adjusting screw counter clockwise until it is free of tension from the opposing pressure switch tab.

4. Run the compressor until it turns itself off at 80 psi. The unloader valve should not discharge any air.

5. Turn the adjusting screw clockwise (use light pressure on screw driver) until air just begins escaping through unloader valve.

6. Turn adjusting screw clockwise one and one-half more turns.

7. Tighten locknut. Be sure the adjusting screw doesn't move when tightening the locknut.

8. Replace pressure switch cover. Test unloader valve by running compressor as outlined in Operation and Checkout Section 2-4. If air is discharging from the unloader valve either during pump up or during step 4 of the adjustment procedure, remove unloader valve, inspect, clean or replace valve seat pin assembly (3).

5-15. DRYNESS INDICATOR. If the dryness indicator is not blue, the drying chamber should be regenerated as follows:

a. If the dryness is indicator is pink, allow the compressor to run for approximately three hours without drawing any air from the storage tank. If after that time the dryness indicator does not start to turn blue, refer to paragraph b below. If the dryness indicator does start to turn blue, allow the compressor to continue to run until it is blue.

b. If the dryness indicator is white, or does not start to turn blue as outlined in paragraph a above, drain storage tank and allow the compressor to run for five to seven nights. If after this time the dryness indicator does not turn blue, replace the dryness indicator disc. If the replacement disc does not remain blue replace the drying chamber as shown in figure 7-2.

5-16. MOTOR AND COMPRESSOR ASSEMBLY. The motor and compressor assembly must be disassembled for replacement of any damaged or worn parts. Suspected damage to the reed valves should be verified before disassembly. Disconnect the intake flex hose from between the cylinders and remove the intake silencer from the top cylinder. With the compressor running, check one cylinder at a time by placing your thumb across the open end of each cylinder elbow or tee. (For the top cylinder, use three three fingers to block all parts of the tee.) A strong suction should be felt at each cylinder. If little or no suction is felt, either the inlet or outlet reed valve is defective in that cylinder.

CAUTION

If any reed valves are broken, all pieces of the reeds must be located and removed from the compressor. These pieces may be anywhere within the tubing and the connecting system.

To disassemble the motor and compressor assembly, refer to figure 7-6 and proceed as follows:

NOTE

Only disassemble the assembly to the extent necessary to replace the worn or damaged part.

a. Remove motor and compressor assembly from base plate as described in paragraph 5-10.

b. Remove intake flex hoses from between cylinders (hose clamps secure flex hoses at each end).

c. Remove intake silencer from top cylinder.

d. Remove cylinder assemblies by removing four bolts and lockwashers from each cylinder head. Inspect O-ring head circle and shim (if present) for damage.

e. Remove valve assemblies from each cylinder and inspect for damage.

f. Remove front half of crankcase by removing three bolts.

g. Inspect compression and expander rings for signs of wear or damage. If they are to be replaced, carefully remove them from pistons.

h. Remove counterbalance by removing one bolt and lockwasher.

i. Insert two jacking bolts (refer to Table 1-3) into the two threaded holes in crankshaft assembly. Slowly turn them, in equal increments to pull piston assembly off motor shaft.

j. If motor or crankcase is to be replaced, remove rear half of crankcase by removing four bolts and lockwashers.

k. If rear half of crankcase was removed, replace and secure in place with four bolts and lockwashers. Torque these bolts to 250 inch-pounds and apply Locktite 271.

NOTE

The front and rear halves of the crankcase are a matched assembly and must be replaced as a set.

l. Place piston assembly and counterbalance on motor shaft with key in place and secure in place with bolt and lockwasher.

NOTE

The piston assembly and counterbalance are a matched assembly and must be replaced as a set.

m. If any compression and expander rings are removed from pistons, replace them in their proper position using figure 7-6 as a guide.

n. Install front half of crankcase and secure in place with three bolts.

o. Assemble cylinder head and valve assemblies as shown in figure 7-6. Apply a thin film of O-ring grease to the O-ring head circle. Install cylinders and secure in place with four bolts and lockwashers. Torque these botls to 70-inch pounds.

CAUTION

Check head clearance, while rocking piston between top of casting and piston using a depth gauge. Clearance must be between 0.010" and 0.016". Insert appropriate shim

p. Install intake flex hoses, using appropriate hose clamps, and left and right outlet tubes between cylinders.

5-17. REPLACEMENT

The replacement of units on the compressor are essentially the reverse of the removal procedures. Refer to the figures in Section VII. All fittings must be leak-proof. Apply paste type pipe dope to all threads except compression fittings before assembling.

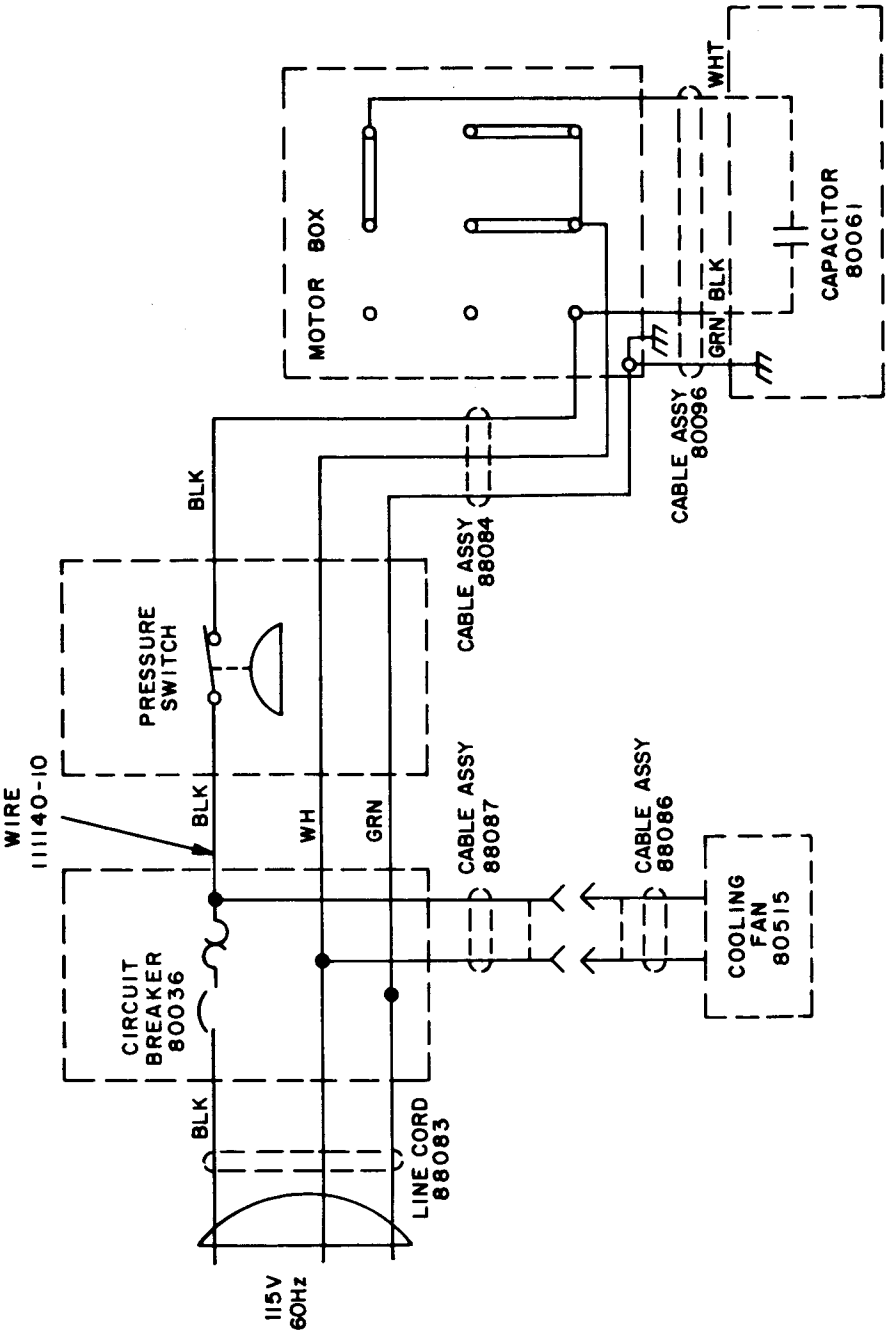

Figure 5-1. Compressor Wiring Diagram

SECTION VI

PREPARATION FOR RESHIPMENT

6-1. GENERAL

To prepare the compressor for reshipment, proceed as follows

a. Perform the turn-off procedure given in paragraph 4-7.

b. Disconnect the interconnecting hoses between the compressor and the Dental Operating and Treatment Unit.

c. Disconnect the power cable from the power source.

d. Carefully wrap the interconnecting air hose and power cable into the bottom of the transit case.

e. Rotate the four transit case cover supports until they point inward toward the compressor.

f. Place transit case cover on the unit and secure all latches.

g. Tighten pressure relief valve on transit cover.

6-2. RESHIPMENT

The transit case should be placed into a suitable shipping carton for additional protection during transit.

SECTION VII

PARTS LIST

This section contains information for ordering replacement parts for the compressor and appropriate illustrations.

Table 7-1. Replacement Parts List

Fig. No.	Index No.	Part No.	Description	Qty
7-1	1	88103	Case, transit assembly with sound foam (top and bottom)	1
	2	30053	Nut, hex: 5/16-18, st,cad pl	4
	3	30102	Washer, split: 5/16, st,cad pl	4
	4	30131	Washer, flat,5/16, st, cad pl	4
	5	30360	Bolt, step: 5/16-18 X 3 in,2-1/2 in min eff thd, st, blk ox	4
	6	88073	Washer, rubber	4
	7	88146-A	Compressor assy (See fig 7-6 for brkdn	1
	8	30362	Bolt, hex hd: 5/16-18 X 2-1/2 in st, cad pl	4
	9	30131	Washer, flat: 5/16, st, cad pl	4
	10	30102	Washer, split: 5/16, st,cad pl	
	11	30053	Nut, hex: 5/16-18, st, cad pl	4
	12	88034	Support, motor	4
	13	88008	Dryer and cooling assy (See fig 7-2 for brkdn)	1
	14	30086	Bolt, hex hd: 5/16-18 X 1 in st, cad pl	2
	15	30131	Washer, flat: 5/16, st, cad pl	2
	16	30102	Washer, split: 5/16, st, cad pl	2
	17	30053	Nut, hex: 5/16-18,st, cad pl	2
	18	88006	Pressure switch and bracket assy (See fig 7-3 for brkdn)	1
	19	88013	Outlet, tank, assy	1
	20	88012	Inlet, tank, assy	1
	21	60017	Valve, relief, safety: ASME 1/4 in soft seat,F.C. Kingston Co., Los Angeles Ca, P/N 115 PS19125PS16 or equal	1
	22	88076	Valve. flow control (See fig 7-4 for brkdn)	1
	23	80015	Tank, pressure, assy	1
	24	30086	Bolt, hex hd: 5/16-18 X 1 in, st cad pl	4
	25	30131	Washer, flat, 5/16, st. cad pl	4
	26	30102	Washer, split:5/16, st, cad pl	
	27	30053	Nut, hex: 5/16-18, st, cad pl	4
	28	88080	Hose, flex assy	3
	29	88095	Tube, main outlet, assy	1
	30	88112	Hose, air supply, assy	2
	31	83049-2	Hose, flex (intake)	2

TABLE 7-1. Replacement Parts List (Cont.)

Fig No.	Index No.	Part No.	Description	Qty
Fig.7-1	32	88116	Clamp, hose flexible, 7/8 in Corbin Hose, Clamp Division of Emhart Corp, Berlin, Conn, P/N A-14, or equal	4
	33	80061	Capacitor, 60 mfd: Cornell-Dublier Elec. Corp, Newark, N.J, PNKNN33V606Q-F-G or equal	1
	34	86037	Bracket, capacitor, Stone Products Co., Bedford, Pa, P/N 1644 or equal	1
	35	30373	Screw, hex hd: 8-32 X 3/4 in, st, cad pl	4
	36	30202	Washer, split: No. 8, st., cad pl	4
	37	30079	Nut, hex: 8-32, st, cad pl	4
	38	88036	Support, post	4
	39	30086	Bolt, hex hd: 5/16-18 X 1 in, st cad pl	4
	40	31031	Washer, flat, 5/16, st, cad pl	4
	41	30102	Washer, split: 5/16,st, cad pl	4
	42	88037	Arm, swivel	4
	43	30080	Bolt, hex hd: 5/16-18 X 1/2 in,st, cad pl	4
	44	30361	Washer, spring: 22.5 mm od X 11.2 mm id X 0.8 mm thick	4
	45	88028	Foam, sound	1
	46	60013	Dryness indicator assy	1
	47	-	Catch, transit case: Environmental Conclave Systems 22000750	8
7-2	1	40234	Clamp, hose, ss, 4-1/6 - 5 in dia: Wittek Mfg Co., Chicago, Ill, P/N 72HS or equal	1 2
	2	30049	Nut, hex, 1/4-20, st, cad pl	2
	3	30022	Washer, split: 1/4, st, cad pl	1
	4	88011	Drying chamber assy	1
	5	88101	Spacer, split	2
	6	80017	Elbow, 1/4 in pipe X 3/8in tube: C-S Brass Mfg Co, Jamaica, NY P/N 69-64 or equal	2
	7	88115	Cooling coil and support assy	1
	8	30022	Screw,bind hd: 6-32 X 1/2 in, st cad pl	8
	9	30014	Nut, hex: 6-32, st, cad pl	8
	10	30209	Washer, split: No 6, st, cad pl	8
	11	80517	Guard, fan: Howard Industries Milford, Ill P/N 6-182-026 or equal	1
	12	80515	Fan, electrical: Howard Industries, Milford, Ill, P/N SPN 3-15-4450 or equal	1
	13	30289	Screw, flat hd: 1/4-20 X 2-3/4 in	4

TABLE 7-1. Replacement Parts List (Cont.)

Fig No.	Index No.	Part No.	Description	Qty.
7-3	1	80036	Circuit breaker: Air Pax Electronics, Cambridge, Md, P/N UPL 1-1-6-600-150 or equal	1
	2	30023	Screw, bind hd: 6-32 X 1/4 in, st cad pl	2
	3	88018	Switch, pressure assy	1
	4	30207	Screw, pan hd: 8-32 X 1/2 in, st cad pl	3
	5	30202	..asher, split: No. 8, cad pl	3
	6	30460	Screw, pan hd Type F: No. 6 X 5/16 in, st, cad pl	4
	7	30245	Washer,lock: No. 6, int teeth, st cad pl	4
	8	30106	Screw, bind hd: 10-32 X 1/2 in st, cad pl	3
	9	30201	Washer, split: No 10, st, cad pl	
	10	30091	Nut, hex: 10-32, st, cad pl	3
	11	80325	Valve,unloader pilot operated (See fig 7-5 for brkdn)	1
	12		Contact set (4 poles): Square D P/N 9998PC2	
7-4	1	60603	Cap, hex	1
	2	60605	"O"-ring,cap, Buna-N, 70 Duro: Parker Seal O-Ring Division, Lexington KY P/N 2-116	1
	3	3839	Spring, check valve	1
	4	88071	Seat, orifice	1
	5	60604	"O"-ring seat: Parker Seal, O-Ring Division, Lexington KY, P/N 2000-011-4470	1
	6	88072	Body, valve	1
7-5	1	88024	Tee, inlet, male run, 3/8 in X 1/4 in: Imperial-Eastman Corp., Chicago Ill, P/N 71-F-06-06	1
	2	3832	Strainer	
	3	80319	Valve Seat Pin Ass'y.	1
	4	80324	Body, valve assy	1
	5	80330	Muffler, silencer: Arrow Pneumatics Inc. P/N ASP-1 or equal	1
	6	30102	Washer, split: 5/16, st, cad pl	1
	7	30370	Nut, hex, JAM: 5/16/-24, brass	1
7-6	1	89317	Right side outlet tube	1
	2	88092	Left side outlet tube	
	3	80050	Intake silencer: Allied Wittan Model M02-44 or equal	1

Table 7-1. Replacement Parts List (Cont.)

Fig No.	Index No.	Part No.	Description	Qty
7-6	4	88022	Tee, Male: Imperial-Eastman Corp. Chicago, Ill,P/N 72-F-06-04	1
	5	80048	Modified Tee	1
	6	89510	Intake elbow	2
	7	89501	Outlet elbow	1
	8	89114	Cylinder head	3
	9	89128	Valve assembly	3
	10	89143	Seal, head	3
	11	89130	Cylinder	3
	12	89149	Shim	AR
	13	89551	Bolt, hex hd: M6 X 70	15
	15	89214	Open crankcase assembly	1
	16	89225	Bolt, hex hd: M8 X 90	1
	17	89554	Washer split: 8 mm	5
	18	89145	Compression ring	3
	19	89144	Expander ring	3
	20	89600	Crankshaft assembly	1
	21	89552	Bolt, hex hd: M8 X 20	4
	22	89118	Key	1
	23	89401-1	Motor, 1 HP	1
	24	89217	Washer, flat: 8mm	1
	25	89213	Crankcase fan	1
	26	89218	Fan washer: 8mm X 40mm	1
	27	89230	Crankcase cover	1
	28	30058	Screw: #8-32 X 1/2 pl	3
4-1	1	88016	Drain assy	1
	2	60067	Disc, dryness indicator	1
	3	52015	Gauge, pressure, 2 in, spec 46912: U.S. Gauge, Cellersville, Pa, Fig. P500, 1/4 LM-160 lbs or equal	1
	4	88043	Valve, unloader(See fig 7-5 for breakdown)	1
	5	80036	Circuit breaker: Air Pax Electronics, Cambridge, Md, P/N UPL1-1-6-600-150 or equal	1
	6	88037	Arm, swivel	4
	7	Not Illus.	Coupling body: Imperial Eastman Chicago, Ill, P/N 298PT, 1/4 in X 3/8 in or equal	1
	8	Not Illus.	Hose, drain	1
5-1	-	88083	Line cord assy	1
	-	88087	Cable assy, circuit breaker to connector	1
	-	88086	Cable assy, connector to fan	1
	-	111140-10	Wire, circuit breaker to pressure switch	1
	-	88084	Cable assy, pressure switch to motor box	1
	-	80096	Cable assy, motor box to capacitor	1

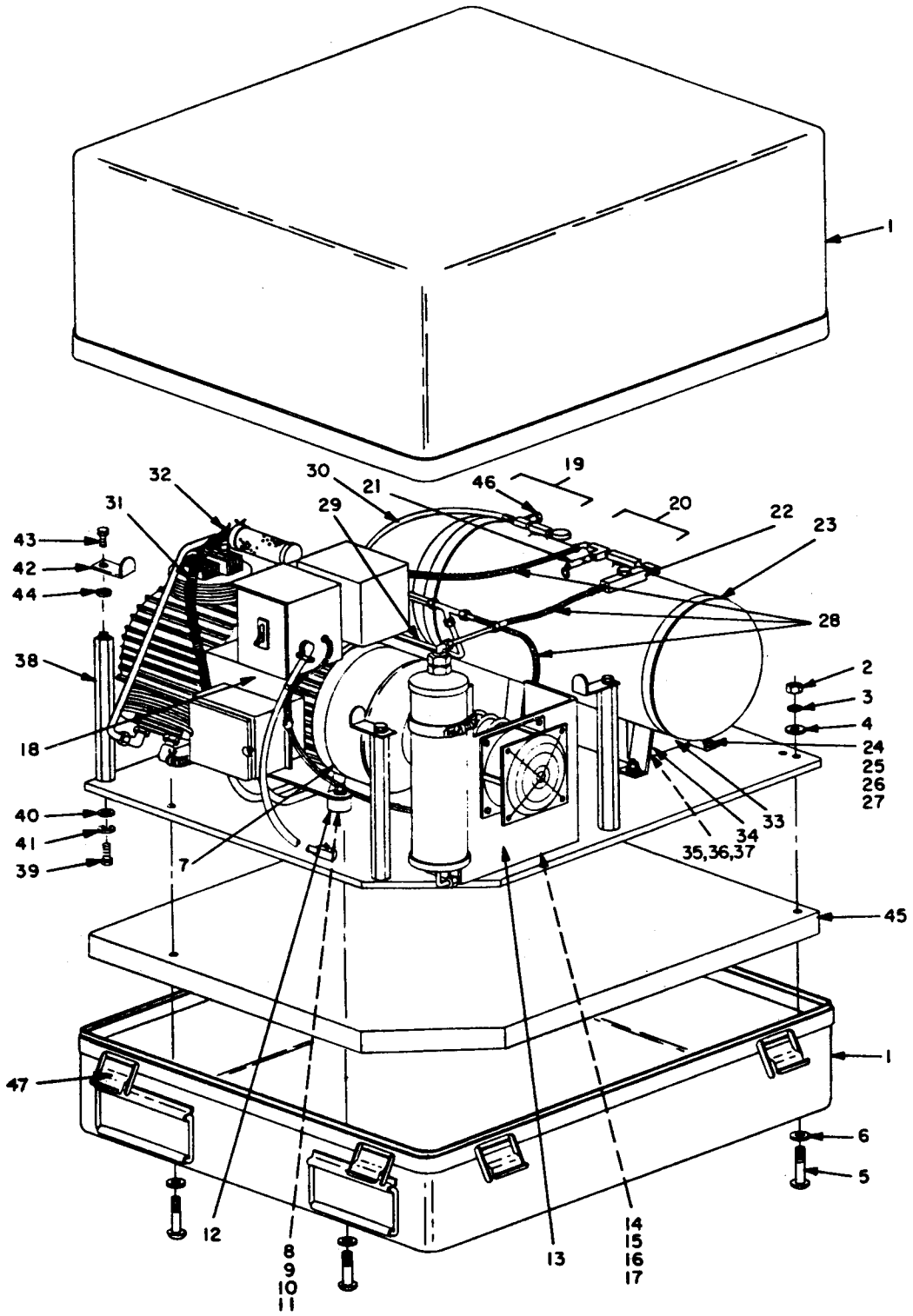

Figure 7-1. Compressor Assembly

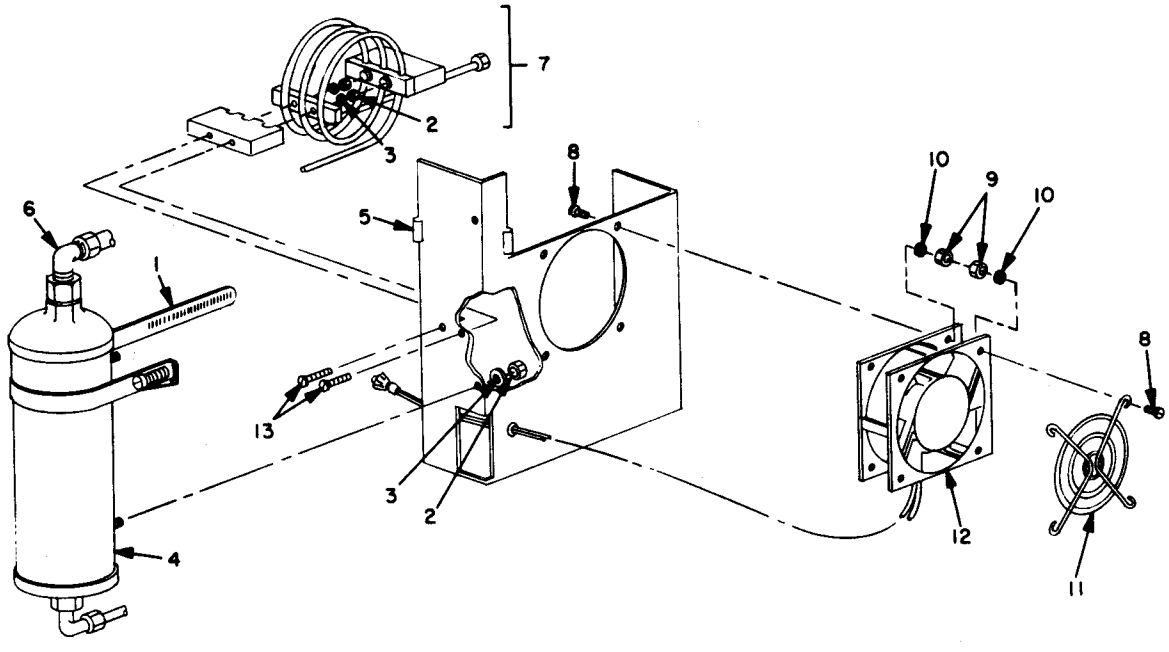

Figure 7-2. Dryer and Cooling Coil Assembly, Part No. 88008

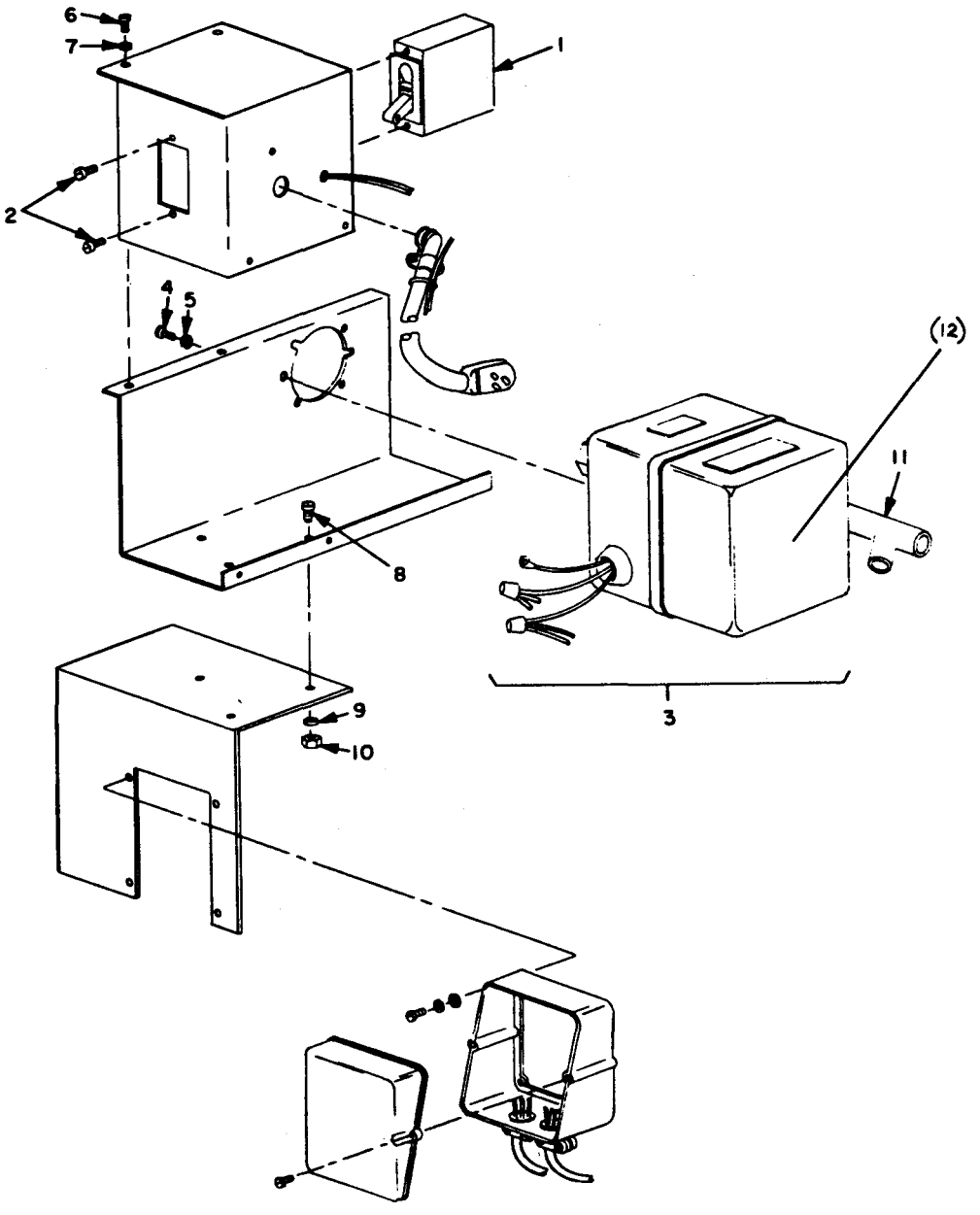

Figure 7-3. Pressure Switch and Bracket Assembly, Part No. 88006

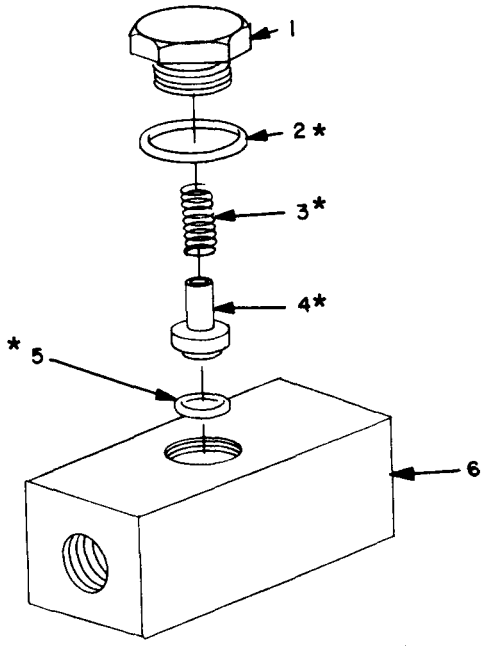

Figure 7-4. Flow Control Valve, Part No. 88076
*Included in Parts Kit, Part No. 88130

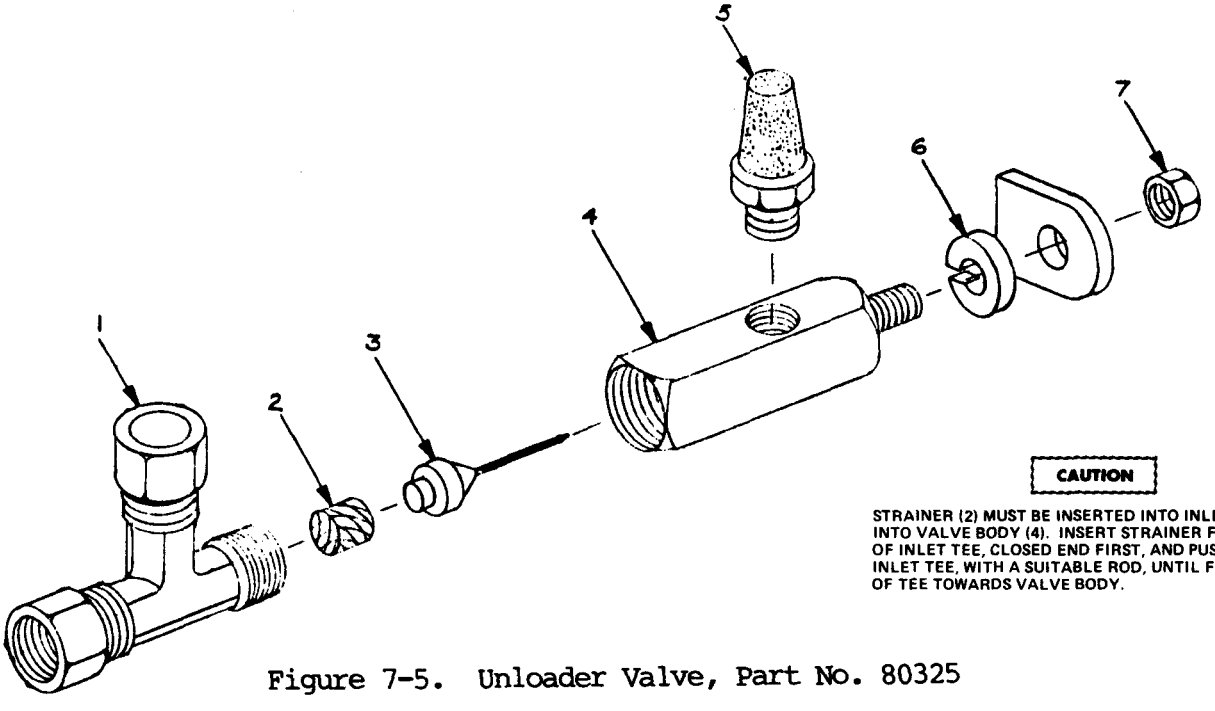
5
7
6
4
1
3
2
CAUTION
STRAINER (2) MUST BE INSERTED INTO INLET TEE (1), NOT INTO VALVE BODY (4). INSERT STRAINER FROM FAR END OF INLET TEE, CLOSED END FIRST, AND PUSH THROUGH INLET TEE, WITH A SUITABLE ROD, UNTIL FLUSH WITH END OF TEE TOWARDS VALVE BODY.

Figure 7-5. Unloader Valve, Part No. 80325

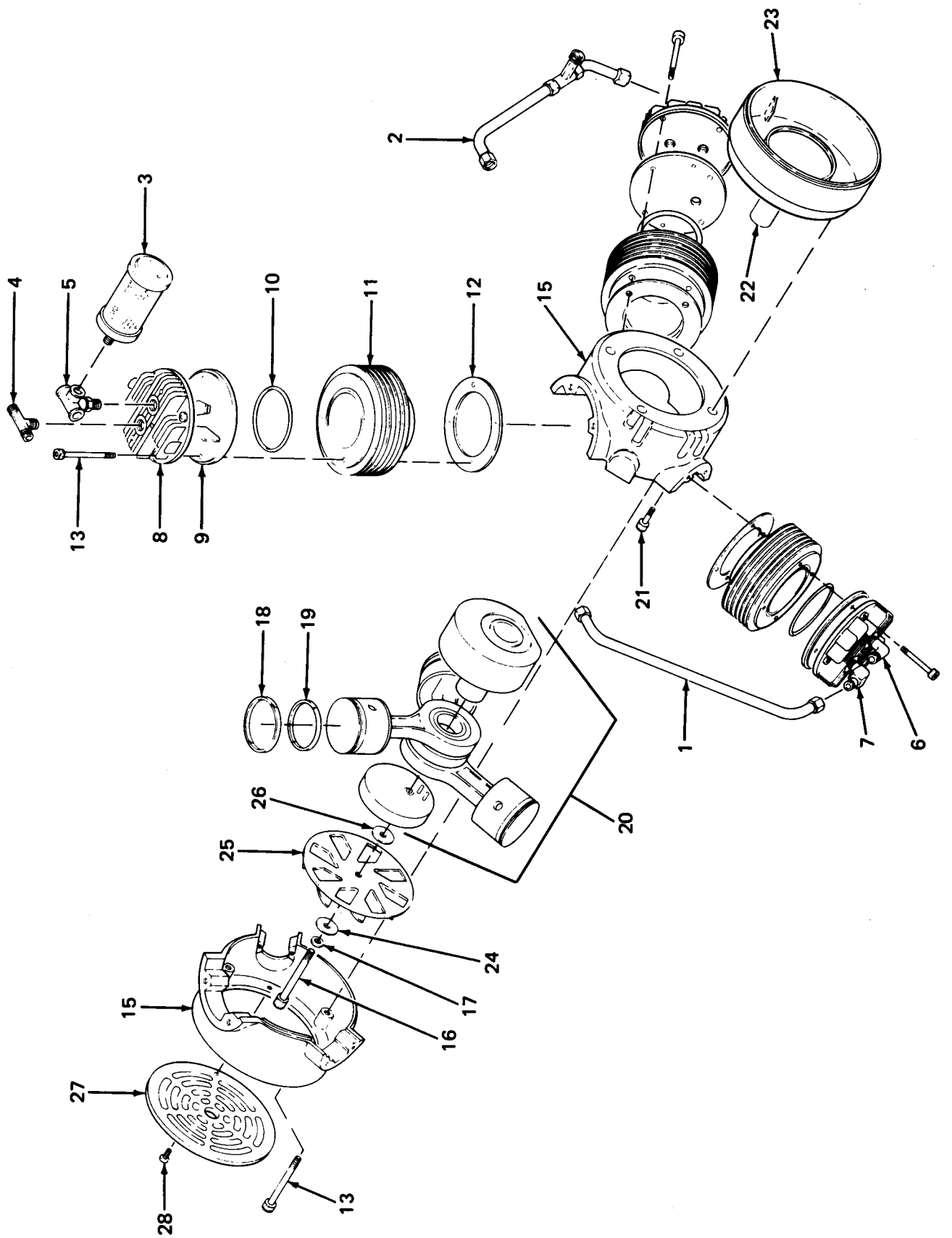

Figure 7-6. Motor and Compressor Assembly, Part No. 88146-A